SEQUENCE LISTING

<110> XU, Ming-Qun
EVANS, Thomas C.
PRADHAN, Sriharsa
COMB, Donald G.
PAULUS, Henry
SUN, Luo
CHEN, Lixin
GHOSH, Inca
NEW ENGLAND BIOLABS, INC.
BOSTON BIOMEDICAL RESEARCH INSTITUTE

<120> METHOD FOR GENERATING SPLIT, NON-TRANSFERABLE GENES THAT ARE ABLE TO EXPRESS AN ACTIVE PROTEIN PRODUCT

<130> NEB-163-PCT

<140>
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<150> 60/135,677
<151> 1999-05-24

<160> 134

<170> PatentIn Ver. 2.0

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SUBSTITUTE SHEET (RULE 26)

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<223> Description of Artificial Sequence: Synthetic, based on Salmonella typhimurium

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Val	His	Val	Asp	Ile	Asp	Pro	Ala	Glu	Ile	Gly	Lys	Asn	Lys	Gln	Pro
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Ala	Leu	Leu	Glu	Gly	Ser	Thr	Ser	Lys	Lys	Ser	Phe	Asp	Phe	Gly	Ser
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Trp	Asn	Asp	Glu	Leu	Asp	Gln	Gln	Lys	Arg	Glu	Phe	Pro	Leu	Gly	Tyr
				85					90					95	
Lys	Thr	Ser	Asn	Glu	Glu	Ile	Gln	Pro	Gln	Tyr	Ala	Ile	Gln	Val	Leu
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His Gln Met Trp Ala Ala Gln Tyr Tyr Thr Tyr Lys Arg Pro Arg Gln
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Trp Leu Ser Ser Ala Gly Leu Gly Ala Met Gly Phe Gly Leu Pro Ala
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Ala Ala Gly Ala Ser Val Ala Asn Pro Gly Val Thr Val Val Asp Ile
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Asp Gly
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SUBSTITUTE SHEET (RULE 26)

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Ile Val His Ile Asp Ile Asp Ser Ala Glu Ile Gly Lys Asn Lys Gln
         35                  40                  45

Pro His Val Ser Ile Cys Ala Asp Ile Lys Leu Ala Leu Gln Gly Leu
     50                  55                  60

Asn Ser Ile Leu Glu Ser Lys Glu Gly Lys Leu Lys Leu Asp Phe Ser
 65                  70                  75                  80

Ala Trp Arg Gln Glu Leu Thr Glu Gln Lys Val Lys His Pro Leu Asn
                 85                  90                  95

Phe Lys Thr Phe Gly Asp Ala Ile Pro Pro Gln Tyr Ala Ile Gln Val
            100                 105                 110

Leu Asp Glu Leu Thr Asn Gly Asn Ala Ile Ile Ser Thr Gly Val Gly
        115                 120                 125

Gln His Gln Met Trp Ala Ala Gln Tyr Tyr Lys Tyr Arg Lys Pro Arg
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Gln Trp Leu Thr Ser Gly Gly Leu Gly Ala Met Gly Phe Gly Leu Pro
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Ala Ala Ile Gly Ala Ala Val Gly Arg Pro Asp Glu Val Val Val Asp
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Ile Asp Gly

<210> 44
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Asp Asp Arg Val Thr Gly Lys Leu Glu Ala Phe Ala Ser Arg Ala Lys
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Ile Val His Ile Asp Ile Asp Ser Ala Glu Ile Gly Lys Asn Lys Gln
35 40 45

Pro His Val Ser Ile Cys Ala Asp Ile Lys Leu Ala Leu Gln Gly Leu
50 55 60

Asn Ser Ile Leu Glu Ser Lys Glu Gly Lys Leu Lys Leu Asp Phe Ser
65 70 75 80

Ala Trp Arg Gln Glu Leu Thr Val Gln Lys Val Lys Tyr Pro Leu Asn
85 90 95

Phe Lys Thr Phe Gly Asp Ala Ile Pro Pro Gln Tyr Ala Ile Gln Val
100 105 110

Leu Asp Glu Leu Thr Asn Gly Ser Ala Ile Ile Ser Thr Gly Val Gly
115 120 125

Gln His Gln Met Trp Ala Ala Gln Tyr Tyr Lys Tyr Arg Lys Pro Arg
130 135 140

Gln Trp Leu Thr Ser Gly Gly Leu Gly Ala Met Gly Phe Gly Leu Pro
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35 40 45

Ala Asp Ile Pro Ile Val Gly Asp Ala Arg Gln Val Leu Glu Gln Met
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Leu Glu Leu Leu Ser Gln Glu Ser Ala His Gln Pro Leu Asp Glu Ile
65 70 75 80

Arg Asp Trp Trp Gln Gln Ile Glu Gln Trp Arg Ala Arg Gln Cys Leu
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Lys Tyr Asp Thr His Ser Glu Lys Ile Lys Pro Gln Ala Val Ile Glu
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Thr Leu Trp Arg Leu Thr Lys Gly Asp Ala Tyr Val Thr Ser Asp Val
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Gly Gln His Gln Met Phe Ala Ala Leu Tyr Tyr Pro Phe Asp Lys Pro
130 135 140

Arg Arg Trp Ile Asn Ser Gly Gly Leu Gly Thr Met Gly Phe Gly Leu
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<400> 46

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Val Ile His Met Asp Ile Asp Pro Ala Glu Met Asn Lys Leu Arg Gln
         35                  40                  45

Ala His Val Ala Leu Gln Gly Asp Leu Asn Ala Leu Leu Pro Ala Leu
     50                  55                  60

Gln Gln Pro Leu Asn Gln Cys Asp Trp Gln Gln His Cys Ala Gln Leu
 65                  70                  75                  80

Arg Asp Glu His Ser Trp Arg Tyr Asp His Pro Gly Asp Ala Ile Tyr
                 85                  90                  95

Ala Pro Leu Leu Leu Lys Gln Leu Ser Asp Arg Lys Pro Ala Asp Cys
            100                 105                 110

Val Val Thr Thr Asp Val Gly Gln His Gln Met Trp Ala Ala Gln His
        115                 120                 125

Ile Ala His Thr Arg Pro Glu Asn Phe Ile Thr Ser Ser Gly Leu Gly
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<223> Nucleotides 5993-6232: E.coli vector pLITMUS28 (New England Biolabs, Inc.)

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<213> Nicotiana tabacum

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<210> 65
<211> 42
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SUBSTITUTE SHEET (RULE 26)

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<211> 33
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<210> 67
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<210> 68
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SUBSTITUTE SHEET (RULE 26)

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<210> 78
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<213> Artificial Sequence

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<400> 78
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<210> 79
<211> 5
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<210> 80
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<210> 81
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<210> 82
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<210> 85
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<210> 86
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<210> 87
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<210> 88
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<210> 89
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<210> 90
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<400> 99
Val Phe Lys Gln Ile
1 5

<210> 100
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 100
Met Phe Lys Gln Ala
1 5

<210> 101
<211> 5
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 101
Leu Phe Lys His His
1 5

<210> 102
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 102
Leu Phe Lys His Gln
1 5

<210> 103
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 103
Met Phe Lys His Val
1 5

<210> 104
<211> 5
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 104
Val Phe Lys Gln Lys
1 5

<210> 105
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

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Leu Phe Lys Gln Gln
1 5

<210> 106
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 106
Leu Phe Lys His Ser
1 5

<210> 107
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 107
Cys Leu Asn Thr Gly
1 5

<210> 108

<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 108
Cys Leu Asn Ser Arg
1 5

<210> 109
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 109
Val Phe Lys His Leu
1 5

<210> 110
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 110
Cys Leu Asn Asn Ile
1 5

<210> 111
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the

ends of the Tn7 transposon

<400> 111
Leu Phe Lys His Gln
1 5

<210> 112
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 112
Cys Leu Asn Lys His
1 5

<210> 113
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 113
Met Phe Lys Gln Tyr
1 5

<210> 114
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 114
Cys Leu Asn Lys Gln
1 5

<210> 115
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 115
Cys Leu Asn Met Ser
1 5

<210> 116
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 116
Leu Cys Leu Asn Ile Leu Ala
1 5

<210> 117
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 117
Asn Cys Leu Asn Ile Asn Ala
1 5

<210> 118
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 118
Leu Met Phe Lys His Leu Ser
1 5

<210> 119
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 119
Thr Leu Phe Lys His Thr Arg
1 5

<210> 120
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 120
Lys Val Phe Lys Gln Lys Glu
1 5

<210> 121
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 121
His Leu Val Phe Lys His Leu

1 5

<210> 122
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 122
Leu Cys Leu Asn Thr Leu Leu
1 5

<210> 123
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 123
Leu Cys Leu Asn Asn Leu Val
1 5

<210> 124
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 124
Glu Val Phe Lys His Glu Gly
1 5

<210> 125
<211> 7
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 125
Lys Val Phe Lys Gln Lys Gly
1 5

<210> 126
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 126
Thr Cys Leu Asn Thr Thr Ile
1 5

<210> 127
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 127
Met Cys Leu Asn Asn Met Asn
1 5

<210> 128
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 128
Leu Leu Phe Lys Gln Leu Arg
1 5

<210> 129
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 129
Arg Cys Leu Asn Asn Arg Leu
1 5

<210> 130
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 130
Met Val Phe Lys Gln Met Ala
1 5

<210> 131
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 131
Ala Met Phe Lys Gln Ala Thr
1 5

<210> 132

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 132
Leu Val Phe Lys His Leu Asp
1 5

<210> 133
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 133
Lys Met Phe Lys Gln Lys Thr
1 5

<210> 134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: based on the ends of the Tn7 transposon

<400> 134
Tyr Cys Leu Asn Asn Tyr Phe
1 5